

### REMARKS

Claims 9, 16, and 24-30 are pending in the present application. Claims 9, 16, 24, 25, 29, and 30 have been amended. Support for these claims is discussed below. No new matter has been added.

Withdrawn process claims 16, 29, and 30 depend from, and have been amended to include all the limitations of, claims 9, 26, and 28, respectively. Applicants request rejoinder of the withdrawn process claims should the product claims from which they depend be allowed.

Applicants gratefully acknowledge the withdrawal of all previous claim objections and rejections.

Applicants note that no rejection or ground for objection is presently asserted against either of claims 26 and 27, yet the Office Action Summary lists them as "objected to," rather than "allowed." Claim 26 is an independent claim; claim 27 depends from claim 26. Allowance of both is respectfully requested.

### Claim Rejections Under 35 U.S.C. § 112

Claims 9, 24, and 25 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. The Office Action states:

The rejection is made due to the new limitation of claim 9, i.e., "polypeptide comprising the amino acid sequence of SEQ ID NO:4, in which ten or fewer amino acids are conservatively substituted". It is not clear which limitation "comprising the amino acid sequence of SEQ ID NO:4" or "in which ten or fewer amino acids are conservatively substituted" controls the scope of the claims. (page 5)

In accordance with the Examiner's helpful suggestion at the top of page 6 of the Office Action, claim 9 has been amended to recite "A substantially purified polypeptide comprising a mutant of SEQ ID NO: 4, wherein ten or fewer amino acids of SEQ ID NO:4 are conservatively

substituted in the mutant.” Applicants thank the Examiner for suggesting the language. Withdrawal of the rejection is requested.

Claims 9, 24, 25, and 28 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly containing new matter. The Office Action states:

This new matter rejection is made because the specification as originally filed does not have a support for “polypeptide comprising the amino acid sequence of SEQ ID NO:4, in which ten or fewer amino acids are conservatively substituted, wherein the polypeptide” in claim 9, “six or fewer amino acids are conservatively substituted” in claim 24, “three or fewer amino acids are conservatively substituted” in claim 25, and the very specific hybridization condition in the new claim 28. (page 6)

Applicants respectfully point out that the specification does contain support for claims 9, 24, 25, and 28. The relevant pages and quotations from the application are listed below.

Support for the recitation in claims 9, 24, and 25 of “conservatively substituted” can be found in the specification, e.g., at page 9, lines 15-18: “The invention also includes a polypeptide, or fragment thereof, that differs from the corresponding sequence shown as SEQ ID NO:2, 4, 6, or 8. The differences are, preferably, differences or changes at a non-essential residue or a *conservative substitution*” (emphasis added).

Additional support can be found, e.g., at page 6, line 29 to page 7, line 5:

The amino acid residue to be mutated is preferably mutated into a different amino acid in which the properties of the amino acid side-chain are conserved. Examples of properties of amino acid side chains are hydrophobic amino acids (A, I, L, M, F, P, W, Y, V), hydrophilic amino acids (R, D, N, C, E, Q, H, K, S, T), and side chains having the following functional groups or characteristics in common: an aliphatic side-chain (G, A, V, L, I, P); a hydroxyl group containing side-chain (S, T, Y); a sulfur atom containing side-chain (C, M); a carboxylic acid and amide containing side-chain (D, N, E, Q); a base containing side-chain (R, K, H); and an aromatic containing side chain (H, F, Y, W).

Support for the recitation in claims 9, 24, and 25 of “ten or fewer amino acids,” “six or fewer amino acids,” and “three or fewer amino acids,” respectively, can be found in the specification, e.g., at page 6, lines 20-22: “The number of amino acids to be mutated in such a mutant is generally 10 amino acids or less, preferably 6 amino acids or less, and more preferably

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3 amino acids or less." This disclosure, combined with the above disclosure regarding conservative substitutions, results in the limitations currently in claims 9, 24, and 25.

Support for the recitation of the specific hybridization condition in claim 28 can be found in the specification, e.g., at page 8, lines 16-19: "A high stringent condition is, for example, washing 3 times in 2X SSC, 0.01% SDS at room temperature for 20 min, then washing 3 times in 1x SSC, 0.1% SDS at 37°C for 20 min, and then washing twice in 1x SSC, 0.1% SDS at 50°C for 20 min."

Applicants submit that there is clear support for claims 9, 24, 25, and 28 in the specification as filed. Applicants request reconsideration and withdrawal of the new matter rejection.

#### CONCLUSION

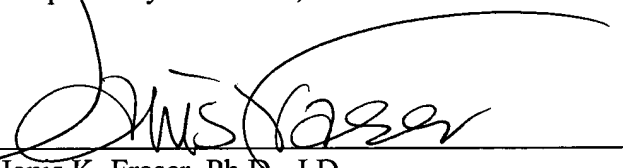
Applicants submit that all claims are in condition for allowance, and request confirmation of such by the Examiner.

Enclosed is a Petition for Extension of Time and a check for the required fee. Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 14875-091001.

Respectfully submitted,

Date:

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